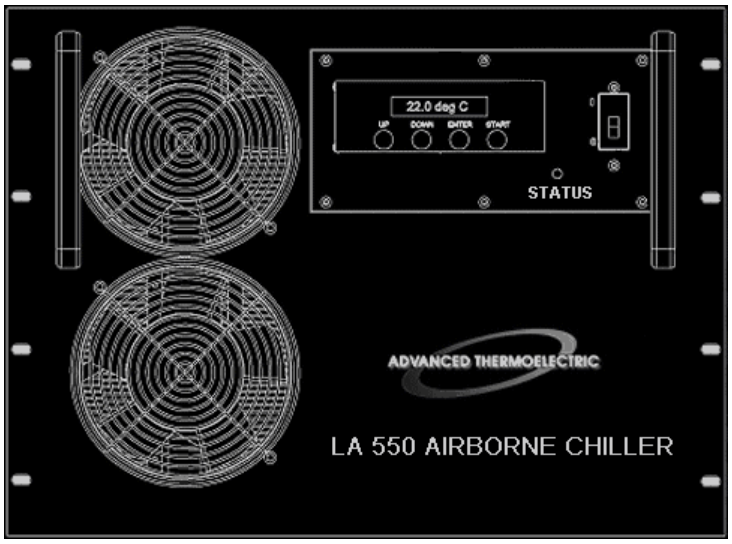
ElectraCOOL L-A 550



550-Watt Rack Mountable
Thermoelectric Chiller

User Manual
PART 2: MSDS

ADVANCED THERMOELECTRIC
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MSDS for Coolant

ETHYLENE GLYCOL

MSDS Number: E5125 --- *Effective Date: 02/25/99*

1. Product Identification

Synonyms: 1,2-Ethanediol; glycol; 1,2-Dihydroxyethane; Ethylene Alcohol; Ethylene Dihydrate
CAS No.: 107-21-1
Molecular Weight: 62.07
Chemical Formula: CH2OHCH2OH
Product Codes:
J.T. Baker: 5387, 5845, 9140, 9298, 9300, 9346, 9349, 9356, L715
Mallinckrodt: 5001, 5037

2. Composition / Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Ethylene Glycol	107-21-1	99 - 100%	Yes

3. Hazards Identification

Emergency Overview

WARNING! HARMFUL OR FATAL IF SWALLOWED. HARMFUL IF INHALED OR ABSORBED THROUGH SKIN. MAY CAUSE ALLERGIC SKIN REACTION. MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM.

J.T. Baker SAF-T-DATA(tm) Ratings (Provided here for your convenience)

Health Rating: 2 - Moderate
Flammability Rating: 1 - Slight
Reactivity Rating: 1 - Slight
Contact Rating: 2 - Moderate
Lab Protective Equip: GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES

Storage Color Code: Orange (General Storage)

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Potential Health Effects

Inhalation:
Vapor inhalation is generally not a problem unless heated or misted. Exposure to vapors over an extended time period has caused throat irritation and headache. May cause nausea, vomiting, dizziness and drowsiness. Pulmonary edema and central nervous system depression may also develop. When heated or misted, has produced rapid, involuntary eye movement and coma.

Ingestion:
Initial symptoms in massive dosage parallel alcohol intoxication, progressing to CNS depression, vomiting, headache, rapid respiratory and heart rate, lowered blood pressure, stupor, collapse, and unconsciousness with convulsions. Death from respiratory arrest or cardiovascular collapse may follow. Lethal dose in humans: 100 ml (3-4 ounces).

Skin Contact:
Minor skin irritation and penetration may occur.

Eye Contact:
Splashes may cause irritation, pain, eye damage.

Chronic Exposure:
Repeated small exposures by any route can cause severe kidney problems. Brain damage may also occur. Skin allergy can develop. May damage the developing fetus.

Aggravation of Pre-existing Conditions:
Persons with pre-existing skin disorders, eye problems, or impaired liver, kidney, or respiratory function may be more susceptible to the effects of this substance.

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4. First Aid Measures

Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion:
Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

Skin Contact:
Remove any contaminated clothing. Wash skin with soap and water for

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at least 15 minutes. Get medical attention if irritation develops or persists.

Eye Contact:
Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

Note to Physician:
Give sodium bicarbonate intravenously to treat acidosis. Urinalysis may show low specific gravity, proteinuria, pyuria, cylindruria, hematuria, calcium oxide, and hippuric acid crystals. Ethanol can be used in antidotal treatment but monitor blood glucose when administering ethanol because it can cause hypoglycemia. Consider infusion of a diuretic such as mannitol to help prevent or control brain edema and hemodialysis to remove ethylene glycol from circulation.

5. Fire Fighting Measures

Fire:
Flash point: 111C (232F) CC
Auto-ignition temperature: 398C (748F)
Flammable limits in air % by volume:
LEL: 3.2; UEL: 15.3
Slight to moderate fire hazard when exposed to heat or flame.
Explosion:
Above flash point, vapor-air mixtures are explosive within flammable limits noted above. Containers may explode when involved in a fire.
Fire Extinguishing Media:
Dry chemical, foam or carbon dioxide. Water or foam may cause frothing. Water spray may be used to extinguish surrounding fire and cool exposed containers. Water spray will also reduce fume and irritant gases.
Special Information:
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full-face piece operated in the pressure demand or other positive pressure mode. Toxic gases and vapors may be released if involved in a fire.

6. Accidental Release Measures

Ventilate area of leak or spill. Remove all sources of ignition. Wear

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appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as sawdust. Do not flush to sewer! US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Separate from acids and oxidizing materials. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

8. Exposure Controls / Personal Protection

Airborne Exposure Limits:
-OSHA Permissible Exposure Limit (PEL):
50 ppm Ceiling
-ACGIH Threshold Limit Value (TLV):
50 ppm Ceiling (vapor)

Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):
If the exposure limit is exceeded, a half-face respirator with an organic vapor cartridge and particulate filter (NIOSH type P95 or R95 filter) may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece respirator with an organic vapor cartridge and particulate filter (NIOSH P100 or R100 filter) may be worn up to 50 times the exposure limit, or the

maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. Please note that N

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series filters are not recommended for this material. For emergencies or instances where the exposure levels are not known, use a full-face piece positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:
Wear protective gloves and clean body-covering clothing.
Eye Protection:
Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:
Clear oily liquid.
Odor:
Odorless.
Solubility:
Miscible in water.
Specific Gravity:
1.1 @20C/4C
pH:
No information found.
% Volatiles by volume @ 21C (70F):
100
Boiling Point:
197.6C (388F)
Melting Point:
-13C (9F)
Vapor Density (Air=1):
2.14
Vapor Pressure (mm Hg):
0.06 @ 20C (68F)
Evaporation Rate (BuAc=1):
No information found.

10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products:
Carbon dioxide and carbon monoxide may form when heated to decomposition. May produce acrid smoke and irritating fumes when heated to decomposition.
Hazardous Polymerization:

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Will not occur.

Incompatibilities:

Strong oxidizing agents. Reacts violently with chlorosulfonic acid, oleum, sulfuric acid, and perchloric acid. Causes ignition at room temperature with chromium trioxide, potassium permanganate and sodium peroxide; causes ignition at 212F(100C) with ammonium dichromate, silver chlorate, sodium chloride and uranyl nitrate.

Conditions to Avoid:

Heat, flames, ignition sources, water (absorbs readily) and incompatibles.

11. Toxicological Information

Toxicological Data:

Oral rat LD50: 4700 mg/kg; skin rabbit LD50: 9530 mg/kg.
Irritation - skin rabbit: 555mg(open), mild; eye rabbit: 500mg/24H, mild.
Investigated as a tumorigen, mutagen, and reproductive effector.

Reproductive Toxicity:

Has shown teratogenic effects in laboratory animals.

--------\Cancer Lists\----------

	---NTP Carcinogen---		
Ingredient	Known	Anticipated	IARC Category
Ethylene Glycol (107-21-1)	No	No	None

12. Ecological Information

Environmental Fate:

When released into the soil, this material is expected to readily biodegrade. When released into the soil, this material is expected to leach into groundwater. When released into the soil, this material is not expected to evaporate significantly. When released into water, this material is expected to readily biodegrade. When released into the water, this material is expected to have a half-life between 1 and 10 days. This material is not expected to significantly bioaccumulate. This material has a log octanol-water partition coefficient of less than 3.0. When released into water, this material is not expected to evaporate

significantly. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material is expected to have a half-life between 1 and 10 days.

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Environmental Toxicity:
The LC50/96-hour values for fish are over 100 mg/l.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Not regulated.

15. Regulatory Information

--------\Chemical Inventory Status - Part 1\--------

Ingredient	TSCA	EC	Japan	Australia
Ethylene Glycol (107-21-1)	Yes	Yes	Yes	Yes

--------\Chemical Inventory Status - Part 2\--------

		--Canada--		
Ingredient	Korea	DSL	NDSL	Phil.
Ethylene Glycol (107-21-1)	Yes	Yes	No	Yes

--------\Federal, State & International Regulations - Part 1\--------

	-SARA 302-		------SARA 313------	
Ingredient	RQ	TPQ	List	Chemical Catg.
Ethylene Glycol (107-21-1)	No	No	Yes	No

--------\Federal, State & International Regulations - Part 2\--------

		-RCRA-	-TSCA-
Ingredient	CERCLA	261.33	8(d)
Ethylene Glycol (107-21-1)	5000	No	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
SARA 311/312: Acute: Yes Chronic: Yes Fire: No Pressure: No
Reactivity: No (Pure / Liquid)

Australian Hazchem Code: No information found.
Poison Schedule: No information found.
WHMIS:
This MSDS has been prepared according to the hazard criteria of the

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Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings: Health: **1** Flammability: **1** Reactivity: **0**

Label Hazard Warning:

WARNING! HARMFUL OR FATAL IF SWALLOWED. HARMFUL IF INHALED OR ABSORBED THROUGH SKIN. MAY CAUSE ALLERGIC SKIN REACTION. MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM.

Label Precautions:

Do not breathe vapor or mist.
Use only with adequate ventilation.
Keep container closed.
Avoid contact with eyes, skin and clothing.
Wash thoroughly after handling.

Label First Aid:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes. Call a physician if irritation develops or persists. If swallowed, give water or milk to drink and induce vomiting. Never give anything by mouth to an unconscious person. In all cases call a physician.

Product Use:

Laboratory Reagent.

Revision Information:

MSDS Section(s) changed since last revision of document include: 8.

Disclaimer:

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